

U.S.S.N. 10/604,490

6

81092467

RECEIVED
CENTRAL FAX CENTER

REMARKS

JUL 20 2006

In the Office Action of May 23, 2006, claims 1-20 are pending. Claims 1, 14, and 20 are independent claims from which all other claims depend therefrom. Claim 14 is herein amended to correct an error in word ordering. Claim 14 is not herein amended for patentability reasons, but is for reading clarity. Applicants, respectfully, request that the amendments to claim 14 be entered as they do not raise new issues that would require further searching or consideration. The amendments to claim 14 have already been examined through prior examination of claim 14 and the other pending claims and previously argued by the Applicants.

The Office Action again states that claims 1-13 stand rejected under 35 U.S.C. 112, first paragraph. The Office Action states that the paragraphs and Figures referred to by the Applicants in the previous Response of March 8, 2006, do not indicate that a plurality of sensing system aid modules (each) and each of the at least one receiver have a plurality of associated active operating nodes. More specifically, the Office Action states, in Argument 1, that each sensing system aid module and receiver operate in only one operating mode and not in different operating modes. Applicants, respectfully, traverse. Applicants submit that it is not recited in claim 1 that "each sensing system aid module" and "each receiver operate in different operating modes, but rather that, "said plurality of sensing system aid modules" and "each of said at least one receiver" have a "plurality of associated active operating modes." Thus, claim 1 requires that multiple sensing system aid modules have multiple operating modes and that each receiver has multiple operating modes. Claim 1 does not require that each sensing system aid module operate in different modes. The March 8th Response provided disclosed examples in the present application for that required by claim 1, which are reiterated below.

In the March 8th Response the Applicants stated that Figures 1-5 and paragraphs [0012]-[0014], [0032]-[0043], [0052]-[0053], [0056]-[0059], [0064], [0069] show and state that each of the sensing systems 14, which each include one or more of the sensing system aid modules 18, have some or all of the receivers 20. Since each of the sensing systems 14 operate in different modes and since certain sensing systems 14 share some of the receivers 20, those receivers that are shared clearly operate in multiple operating modes. For example, note that the rearward vision receivers 60, of Figure 1, are part of the frontal and rear vision system 22 and the rearward only vision system 24. Also, notice that the rearward vision receivers 60 may be used during the parking aid mode, the reversing aid mode, and the pre-collision mode. In addition, the modes have different associated sensing distances, which further supports multiple operating modes of the rearward vision receivers 60. Thus, from this alone one can clearly see that each of the two receivers 60 has multiple operating modes.

It is stated in the present application that the sensing system aid modules 18 have associated therewith a reversing-aid mode, a parking-aid mode, a pre-collision-aid mode, an adaptive cruise control mode, a lane departure mode, a lane-keeping mode and various other modes. See paragraphs [0031]-[0033] and [0035]-[0037] of the present application, which describe the stated modes. Paragraph [0032] of the present application describes multiple operating modes for the parking-aid module. Paragraph [0032] states that the parking-aid mode, which is associated with the parking-aid module, includes both a forward detection mode and a rearward detection mode. Thus, clearly multiple operating modes are associated with the sensing system aid modules.

The Office Action states that the paragraphs and the Figures, referred to by the Applicants in the March 8th Response, indicate, "the system has a plurality of sensing system aid modules operating in different modes." Applicants have clearly shown that the stated paragraphs and Figures also show multiple receivers that each operate in multiple modes, as claimed.

Therefore, the 35 U.S.C. 112 rejection with respect to claims 1-13 has been overcome and claims 1-13 are in allowable form.

Claims 14-20 remain rejected under 35 U.S.C. 102(e) as being anticipated by Scholfield (U.S. Pub. No. 2004/0145457).

Amended claim 14 recites a method of performing multiple sensing system aids for a vehicle. The method includes generating an object detection signal via multiple vision sensing systems. Sensing system aid modules, which include a parking-aid module that is used for both forward and rearward object detection simultaneously, correspond with each of the vision sensing systems and are operated via a single controller.

Argument 2 of the Office Action states that in paragraph [0382], Scholfield states that the parking aid camera utilizes other techniques as described and referenced with regards to the reverse back-up aid cameras. From this the Office Action infers that the parking aid camera has a module to control its operation as a reverse aid camera module and camera. Applicants submit that paragraph [0382] of Scholfield in stating that the parking aid camera utilizes "other techniques" as described and referenced with regards to the reverse back-up aid cameras, referred to the optic and lighting techniques described, such as those to avoid glare. Nowhere is it stated, disclosed, or suggested that the parking aid camera or the reverse aid camera of Scholfield have associated parking aid or reversing aid modules or that the modules operate in a similar format. Since such modules are not mentioned in Scholfield, Applicants can only assume that the Examiner in stating that such modules operate in a similar format must be taking Official Notice or using improper hindsight reasoning. Regardless of whether the cameras have associated modules, it is clear from Scholfield that the parking aid camera is used solely for forward detection and the reverse aid camera is used solely for rearward detection, that the cameras are activated based on a gear shifter, and that the cameras are not used simultaneously.

The Office Action, in Argument 3, states that Scholfield does disclose a parking aid mode and the slow speed associated with the parking mode. Applicants submit that this is irrelevant. The Applicants admitted on page 7 of the March 8th Response that Scholfield disclosed a parking aid camera that is used for forward object detection while traveling below a predetermined velocity. What Scholfield does not teach or suggest is the use of a parking aid module, or any module or modules for that matter, which are used in association with multiple sensing systems and for multiple purposes simultaneously. As such, the claimed simultaneous forward and rearward object detection is not disclosed nor is the performance of the same by a parking-aid module.

The Office Action, in Argument 3, further states that paragraph [0390] of Scholfield suggests object detection used in guiding vehicle motion. Applicants submit that in paragraph [0390] Scholfield discloses the warning of a vehicle occupant the detection of an object rearward of a vehicle when the vehicle is in a reverse gear. Scholfield states that information pertaining to the object may be indicated for vehicle occupant awareness. Scholfield does not suggest that a system of the vehicle in response to the object detection guides vehicle motion. Besides, Applicants submit that such guidance, even if it were suggested, does not infer simultaneous forward and rearward object detection nor does it infer the simultaneous operation in multiple modes.

The Office Action on page 5 states that Schofield fails to clearly state a plurality of sensing system aid modules. Applicants agree and submit that Schofield fails to disclose any sensing system aid modules, especially as claimed, the simultaneous use thereof, and the simultaneous mode operation thereof, as well as other features recited above and below. The Examiner on page 5 of the Office Action takes Official Notice and is using improper hindsight reasoning by stating that it would have been obvious to one skilled in the art to use more than one sensing system aid module in the system of Schofield because it would be desirable to operate the multiple vision sensing system simultaneously. The stated sensing system aid modules and the stated desire can only be obtained in

U.S.S.N. 10/604,490

10

81092467

view of the present application. Such reasoning is simply improper; see below arguments.

Applicants further submit that the Final Office Action is using the same improper grounds for rejection as in the Non-Final Office Action of December 9, 2005. The Final Office Action is providing the same 35 U.S.C. 112 and 35 U.S.C. 102(e) rejections as provided in the Non-Final Office Action, which Applicants have shown are improper. As such, the present application was improperly made Final.

Applicants further submit that the arguments provided in the March 8th Response, with respect to claims 14 and 20 are valid and do support the allowance thereof and as such are reiterated below. The Office Actions state that Scholfield discloses operating sensing system aid modules including a parking-aid module that corresponds with each of multiple vision sensing systems. Applicants traverse. Applicants are unable to find anywhere within the Scholfield reference the disclosure of a parking-aid module. Although Scholfield discloses the use of a parking-aid camera, such disclosure does not suggest the use of a parking-aid module. A parking-aid camera may be used without the presence of a parking-aid module.

Since a parking-aid module is not disclosed in Scholfield, Applicants submit it is unclear, in view solely of Scholfield, how such a module would be used. Nevertheless, regardless of whether Scholfield discloses a parking-aid module, Scholfield clearly fails to disclose a parking-aid module as claimed. The parking-aid camera mentioned in Scholfield is used solely for forward imaging, see paragraph [0382] of Scholfield. On the other hand, the receivers described in the present application, when operated in the parking-aid mode, are used for both forward and rearward object detection. This forward and rearward object detection is recited in claim 14. Also, since the parking-aid camera of Scholfield is used solely for forward imaging while traveling below a predetermined velocity, the parking-aid camera is used for a single purpose. This is unlike the

U.S.S.N. 10/604,490

11

81092467

parking-aid module claimed, which is used in multiple sensing systems and thus for multiple purposes.

Furthermore, although Scholfield discloses the use of a parking-aid camera and a reversing-aid camera, this does not infer the use of a parking aid module that is associated with multiple sensing systems. The parking-aid camera of Scholfield is used when the vehicle is traveling in a forward direction at a velocity that is below a predetermine velocity, such as 5mph. The parking-aid camera of Scholfield is not utilized at the same time the reversing-aid camera is used. The reversing-aid camera of Scholfield is used when the associated vehicle is in a reverse gear, see paragraph [0360] of Scholfield. Nowhere in the Scholfield reference is it suggested that the parking-aid camera is used in multiple modes and/or is associated with multiple sensing systems.

Moreover, Scholfield fails to teach or suggest the limitation of operating multiple sensing system aid modules via a single controller. Applicants have scanned the Scholfield reference and have only found the disclosure of a tire pressure controller and a head lamp controller. Applicants are unable to find any suggestion or disclosure of a controller in Scholfield that is associated with one or more sensing systems or a suggestion of using only a single controller to operate multiple sensing system aid modules. There is simply no disclosure within Scholfield of sensing system aid modules, as admitted in the Office Action.

The Office Action states that it would have been obvious to one skilled in the art to use more than one sensing system aid module in the system of Scholfield. Applicants traverse and submit that such use can only be gleaned from material disclosed within the present application. Applicants submit that the use of cameras for forward and rearward imaging does not suggest that multiple sensing system aid modules are used; rather simply that such imaging is performed. Forward and rearward imaging may be performed without use of a designated module or may be performed through the use of one or more designated modules.

U.S.S.N. 10/604,490

12

81092467

Examiner appears to be using improper hindsight reasoning in view of the present application and/or taking Official Notice without concrete evidence to support such findings. Applicants are aware that hindsight reasoning is proper so long as it takes into account only knowledge which was within the level of ordinary skill at the time of the claimed invention was made and does not include knowledge gleaned only from the Applicants' disclosure. Applicants believe that to arrive at a conclusion of obviousness, especially in view of the above relied upon reference, can only be made through the gleaning of knowledge from Applicants' disclosure. It is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based. See *In re Zurko*, 258 F.3d at 1386, 59USPQ2d at 1697 (Fed. Cir. 2001).

Referring to MPEP 2144.03, Office Notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. The notice of facts beyond the record, which may be taken by the Examiner must be "capable of such instant and unquestionable demonstration as to defy dispute." *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970). Applicants submit that the limitations in question are not capable of such instant and unquestionable demonstration as to defy dispute. Specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard in the pertinent art. *Id.* at 1091, 165 USPQ at 420-21. Any facts so noticed should be of notorious character and serve only to "fill in the gaps" in an insubstantial manner. It is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based. *Zurko*, 258 F.3d at 1386, 59USPQ2d at 1697 (Fed. Cir. 2001). The facts constituting the state of the art are normally subject to the possibility of rational disagreement among reasonable men and are not amendable to the taking of such notice. *In re Eynde*, 480 F.2d 1364, 1370, 178 USPQ 470, 474 (CCPA

U.S.S.N. 10/604,490

13

81092467

1973). Ordinarily, there must be some form of evidence in the record to support an assertion of common knowledge. General conclusions concerning what is "basic knowledge" or "common sense" to one of ordinary skill in the art without specific factual findings and some concrete evidence in the record to support these findings will not support an obviousness rejection. *Lee*, 277 F.3d at 1344-45, 61 USPQ2d at 1434-35 (Fed. Cir. 2002).

The Examiner must provide specific technical and scientific reasoning to support her conclusions of common knowledge. *In re Soli*, 317 F.2d at 946, 37 USPQ at 801 (CCPA 1963). Applicants submit that no specific factual findings or concrete evidence has been put forth nor has any specific technical reasoning been put forth to support the Official Notice taken. To simply state that multiple sensing system aid modules is known in the art without support for the stated limitations is irrelevant and is not a proper or valid argument that can be used against the Applicants. Also, if the Applicants challenge a factual assertion as not properly officially noticed or not properly based upon common knowledge, the Examiner must support the finding with adequate evidence. See 37 CFR 1.104(c)(2). Again Applicants submit that no such evidence has been provided to support a teaching or suggestion of the claimed elements. Besides regardless of whether multiple sensing system aid modules are suggested in Scholfield, Applicants have clearly shown above that Scholfield fails to teach or suggest other recited claim limitations.

In order for a reference to anticipate a claim the reference must teach or suggest each and every element of that claim, see MPEP 2131 and *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628. The Office Action does not provide evidence that each and every element is taught or suggested nor are the Applicants able to find such evidence in the relied upon reference. Thus, since Scholfield fails to teach or suggest each and every element of claim 14, claim 14 is novel, nonobvious, and is in a condition for allowance. Also, since claims 15-19 depend upon claim 14, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons.

U.S.S.N. 10/604,490

14

81092467

Claim 20 recites a vision-based object detection system for a vehicle that includes a transmission gear sensor, which generates a transmission gear signal, and vision sensing systems. The vision sensing systems have one or more vision receivers that generate an object detection signal and operate simultaneously in multiple modes. The modes are selected from a reversing-aid mode, a parking-aid mode, a lane departure aid mode, and a lane-keeping aid mode. The parking-aid mode corresponds to both frontal and rearward detection. A single vision processor, having a plurality of sensing system aid modules, corresponds with each of the vision sensing systems. The sensing system aid modules are operated in response to the transmission gear signal. A warning signal or a countermeasure signal is generated in response to object detection signal.

The Office Action states that Scholfield discloses the simultaneous operation of vision sensing systems in more than one of the stated modes. Applicants are unable to find disclosure in Scholfield of operating a vision sensing system in a parking-aid mode as claimed, in a lane departure aid mode, or in a lane-keeping aid mode. As stated above, the simply disclosure of a parking-aid camera that is solely utilized when the host vehicle is traveling in a forward direction and at a slow speed, does not suggest forward and rearward object detection while operating in a parking-aid mode, as claimed. Since Scholfield fails to disclose three of the four recited modes, Scholfield also clearly fails to disclose simultaneous operation in more than one of the claimed modes.

Applicants have also shown above that Scholfield fails to teach or suggest the use of a single controller or processor that corresponds with and/or operates multiple sensing system aid modules. Applicants submit that Scholfield also fails to teach or suggest a single processor that has multiple sensing system aid modules. In Scholfield multiple controllers are shown, such as the tire pressure controller and the head lamp controller, which are used separately and are each associated with a single system.

U.S.S.N. 10/604,490

15

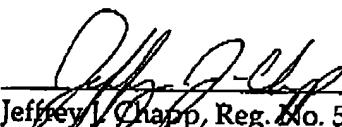
81092467

Applicants also take note that Scholfield fails to disclose the operating of multiple sensing systems in multiple modes, including a reversing-aid mode, a parking-aid mode, a frontal pre-collision sensing mode, a lane departure aid mode, and a lane-keeping aid mode, in response to a transmission gear signal. This is recited and inferred in the limitations of claim 20. This is especially true since Scholfield clearly fails to disclose three of the four recited modes. Thus, Scholfield fails to teach or suggest each and every element of claim 20. Therefore, claim 20 is also novel, nonobvious, and is in a condition for allowance.

In light of the amendments and remarks, Applicants submit that all the objections and rejections are now overcome. The Applicants have added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, she is respectfully requested to contact the undersigned attorney.

Respectfully submitted,

ARTZ & ARTZ, P.C.



Jeffrey L. Chapp, Reg. No. 50,579
28333 Telegraph Road, Suite 250
Southfield, MI 48034
(248) 223-9500

Dated: July 20, 2006